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Grimshaw Architects LLP
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Attention: Ms Louise Browne

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Dear Sirs

Review of Reports – Hazardous Building Materials
Arthur Phillip High School and Parramatta Public School
Macquarie Street, Parramatta NSW

1. Introduction

This letter provides a review of existing and historical Hazardous Building Materials (HBM) reports relating to the proposed redevelopment of Arthur Phillip High School (APHS) and Parramatta Public School (PSS), Macquarie Street, Parramatta (the site). The proposed redevelopment includes the retention of heritage buildings, demolition of other existing buildings and the construction of a seventeen storey secondary school (APHS) on the northern site and a four storey primary school (PPS) on the southern site.

2. Scope of Works

The scope of works comprised a review of existing and historic asbestos registers and asbestos / hazmat reports as supplied by the client. The provision of a summary of the findings, potential data gaps or omissions and initial advice regarding further surveys and management strategies that need to be implemented in order to meet the requirements of WHS Regulation 2011 (NSW) in relation to the proposed development.

The following existing and historical HBM reports were reviewed:

- Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015 (AG, 2015b); and
- Current and historic asbestos registers and asbestos / hazmat reports for the schools (as supplied by the client).

3. Site Description

The site is located on Macquarie Street in Parramatta CBD and comprises two existing schools. APHS is located on the northern and southern sides of Macquarie Street and PPS is located on the southern side of Macquarie Street. APHS occupies a total area of approximately 2.14 ha (1.24 ha in the north and 0.9 ha in the south) and PPS occupies an area of approximately 0.87 ha. It is understood that with the exception of the two heritage buildings on the south site, all current building structures are to be demolished as part of the development.

4. Review of Reports

The following sections summarise the findings of the reports reviewed and identify potential data gaps or omissions.

Arthur Phillip High School Reports - Historical Reports

1. and 2. 'Asbestos in Grounds, Asbestos Management Plan, Arthur Phillip High School' Parsons Brinckerhoff report ref: 2115108B PR_7051.doc dated February 2008. (two copies identical).

3. 'Asbestos in Grounds, Asbestos Management Plan, Arthur Phillip High School' Parsons Brinckerhoff report ref: 2115108B PR_8423 dated July 2008.

Reports are all draft and pertain to site in-ground asbestos contamination. No longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

4. 'Air Monitoring Results' Airsafe report ref:09784 dated 16 February 2008.

5. 'Clearance Certificate' Airsafe report ref:09784 dated 16 February 2008.

Reports are regarding minor remediation of site grounds by 'emu pick' of surface asbestos fragments. No longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

6. 'Hygienist Report, Arthur Phillip High School – fibrous cement fragments in ground' Parsons Brinckerhoff report ref: 2116799A/LT_7464/TR/fr (which includes 'Hygienist Report.1 and Pick-Up-Report which are appendices to Hygienist Report) dated 3 March 2008

Report is a site inspection of surface asbestos-containing materials (ACM) and provision of asbestos management options issued following minor remediation of site grounds by 'emu pick' of surface asbestos fragments in February 2008. No longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

7. ‘Air Monitoring Results’ Airsafe report ref:09784 dated 16 February 2008.

Report is for air monitoring conducted during minor remediation of site grounds by ‘emu pick’ of surface asbestos fragments. No Clearance Certificate is present and no longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

8. ‘Asbestos in Grounds, Asbestos Management Plan, Arthur Phillip High School’ Parsons Brinckerhoff report ref: 2116799B PR_7051-RevA dated December 2010.

Report is draft copy and appears to be a reissue of ‘Asbestos in Grounds, Asbestos Management Plan, Arthur Phillip High School’ Parsons Brinckerhoff report ref: 2115108B PR_7051.doc dated February 2008. No longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

9. Airsafe report (no ref. No.) dated 21 January 2006. (two copies identical)

Report is for visual clearance conducted following minor remediation of site grounds by ‘emu pick’ of surface asbestos fragments. No air monitoring records present and no longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

10. ‘Asbestos in Grounds, Asbestos Management Plan, Arthur Phillip High School’ Parsons Brinckerhoff report ref: 8892_ASB_231112_AMP dated January 2013.

Report is draft copy and appears to be a reissue of ‘Asbestos in Grounds, Asbestos Management Plan, Arthur Phillip High School’ Parsons Brinckerhoff report ref: 2116799B PR_7051-RevA dated December 2010. No longer valid as presume superseded by Alliance Geotechnical Report; *Remedial Action Plan and Asbestos Management Plan, Arthur Phillip High School and Parramatta Public School*, Report Number: 1915-ER-1-2, dated 14 August 2015. Of use for historical information only.

The above historical reports listed 1 through 10 are of little or no current use to the Project. The documentation does not appear complete, however the reports are of historical interest only with regards to previous asbestos findings and management of site asbestos ground contamination and minor management remediation works adjacent to the sports oval.

Arthur Phillip High School Reports - Asbestos Register (Hazardous Materials and Risk Assessment)

1. 'Hazardous Materials Survey Report Arthur Phillip High School' Noel Arnold report ref: SB0158 : 73389-8892 dated September 2009.

This report is of limited areas only (Building A rooms AR1022 AR1024 AR1025 AR2020 AR2021 AR2024 and Building D DR0004 and DR005) and was prepared for Bovis Lend Lease prior to proposed refurbishment works. Asbestos-containing materials, lead-containing paint and synthetic mineral fibre products were identified. There is laboratory confirmation of asbestos materials but not of the lead paint coatings. No information regarding the proposed refurbishment works or removal of ACM or other hazardous materials from these rooms has been made available.

2. Asbestos Identification Analysis - Arthur Phillip High School (8892), Smith Street, Parramatta NSW 2150 Greencap-NAA dated 7 May 2015.

Asbestos bulk analysis report for additional samples taken by attending asbestos consultant undertaking 2015 asbestos / hazmat survey.

3. Asbestos Register (Hazardous Materials and Risk Assessment) Arthur Phillip High School (8892) Greencap-NAA dated 10 June 2015.

This report appears to be current Asbestos Register for Arthur Phillip High School (with a designated unique reference number of 8892). The original survey was undertaken by Noel Arnold in November 2008 and the site was subject to a reinspection/resurvey by Greencap-NAA in May/June 2015. Both surveys were management (compliance) surveys and the Register states that there is an additional document 8892_ASB_231112_AMP to refer to presumably the asbestos management plan (AMP) for the site.

The Register appears to be for asbestos only and does not have an 'other hazardous materials' register or section (i.e. lead-containing paints, lead dust, synthetic mineral fibre products or PCBs). The Register has a number of non-accessed areas and assumed asbestos common to the limitations of a standard management survey. There was no access afforded to ceiling voids, eaves, movement area ceilings, flat roofs and roof level / roof spaces. Similarly there was no access to any sub-floor areas. Electrical boards were not accessed and were assumed to be asbestos-containing. All demountables were either assumed to be non-asbestos containing or assumed to have asbestos installations present but no samples appear to have been taken to confirm either assumption. In addition since the school was occupied and no damage could be made to decorative fixtures and fittings it should also be presumed that no intrusive investigations will have been undertaken in any areas.

The documents are satisfactory to meet day to day WHS management requirements for an asbestos Register to be held on site at a place of work. However, due to the limitations of the survey: the number of non-accessed areas, no investigation of other hazardous materials and absence of invasive survey techniques, the documents are insufficient to meet the requirements of a pre-demolition survey and Register of asbestos and other hazardous materials. Further survey works and update of Register to be undertaken.

Parramatta Public School Reports - Asbestos Register (Hazardous Materials and Risk Assessment)

1. 'Hazardous Materials Survey Report Parramatta Public School' Noel Arnold report ref: SB0308: 75141-2840 dated November 2009.

This report is of limited areas only (Building B00B and B00F and demountables 15709, 14714, 14701, 14428 and 13596) and was prepared for Brookfield Multiplex to proposed refurbishment works. Asbestos-containing materials were identified. No lead-containing paints, synthetic mineral fibre products or PCBs were identified. There is laboratory confirmation of asbestos materials but no analysis of lead paint coatings. No information regarding the proposed refurbishment works or removal of ACM or other hazardous materials from these rooms has been made available.

The numbers of the demountables in this report do not appear to match with any of the demountables listed in the current PPS asbestos Register nor do they match with any of the demountable numbers in the adjacent APHS. The findings in B00B and B00F are not present in the current Register. Further investigation required.

2. Asbestos Register (Hazardous Materials and Risk Assessment) Parramatta Public School (2840) Greencap-NAA dated 03 December 2015.

This report appears to be current Asbestos Register for Parramatta Public School (with a designated unique reference number of 2840). The original survey was undertaken by Noel Arnold in April 2008 and the site was subject to a reinspection/resurvey by Greencap-NAA in 2015 with Register issued 03 December 2015. Both surveys were management (compliance) surveys and the Register states that there are no additional documents for the site i.e. no asbestos management plan (AMP) present.

The Register appears to be for asbestos only and does not have an 'other hazardous materials' register or section (i.e. lead-containing paints, lead dust, synthetic mineral fibre products or PCBs). The Register has a number of non-accessed areas and assumed asbestos common to the limitations of a standard management survey. There was no access afforded to some ceiling voids, roof level / roof spaces, rooms and sub-floor areas. There are also a number of areas designated 'Recently modified space – requires inspection' but no inspection has been carried out. No inspection of electrical boards in the school has been made. All demountables have been assumed to be non-asbestos containing but no samples appear to have been taken to confirm the assumption. In addition since the school was occupied and no damage could be made to decorative fixtures and fittings it should also be presumed that no intrusive investigations will have been undertaken in any areas.

The documents are satisfactory to meet day to day WHS management requirements for an asbestos Register to be held on site at a place of work, but appear to lack an AMP which should be developed for the site. However, due to the limitations of the survey: the number of non-accessed areas, no investigation of other hazardous materials and absence of invasive survey techniques the documents are insufficient to meet the requirements of a pre-demolition survey and Register of asbestos and other hazardous materials. Further survey works and update of Register to be undertaken.

5. Conclusions

In accordance with Work Health and Safety Regulations 2011 (NSW) (specifically chapter eight) and associated Codes of Practice (How to Manage and Control Asbestos in the Workplace [Safe Work Australia (2011)] and Demolition Work Code of Practice [WorkCover NSW (2014)]) it is recommended that a full access (intrusive) asbestos and other hazardous materials survey is undertaken of all building structures on site and an updated Register of asbestos and other hazardous materials drawn up prior to the commencement of any demolition works. These works would need to be undertaken outside of school hours to ensure no staff, pupils or members of the public are present (preferably school holidays or after the site has been vacated).

The Register of asbestos and other hazardous materials should be used as the basis for the development of an Asbestos (and other hazardous materials) Removal Control Plan which will form part of the Demolition Action Plan for the site.

6. Limitations

Douglas Partners (DP) has prepared this report for this project at Macquarie Street, Parramatta in accordance with DP's proposal dated 12 February 2016 and acceptance received from Paul Altree-Williams of Grimshaw Architects LLP dated 3 March 2016. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Grimshaw Architects LLP for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully
Douglas Partners Pty Ltd

Paul Patton
Senior Occupational Hygienist

Attachment: About this Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.